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AI IN BUSINESS EDUCATION: ISSUES AND CHALLENGES

Dr. Lovely Sharma[1]

[1] Assistant Professor PG Department of Computer Science & IT PCM S.D. College for Women, Jalandhar

ABSTRACT

Inadequate techniques for teaching artificial intelligence abound in business curricula. Mechanized, rule-based systems can easily reinforce negative stereotypes of business and business people as superficial and irrelevant. This paper surveys other AI systems, and in doing so, addresses several key business education-associated issues. Notably, we emphasize the need for business educators to consider how to prepare their students to profitably interact with these systems in professional environments. Issues concerning personal, professional, and pedagogical development are also discussed, as are a number of indispensable contributions the humanities disciplines could make in these areas. Several challenges are noted and suggestions provided t aid the development of business education courses designed to inform and/or foster general, critical, and ethical AI literacy.

As many business leaders and business students are new to the subject of artificial intelligence, or have limited knowledge of it, the job of the business educator is to make the subject relevant and interesting and to provide students with skills they can use in their careers. To begin, business instructors need to be aware of the AI systems that exist, in order to be capable of explaining how they have the potential to benefit a firm, an industry, or the global economy. Furthermore, business faculty need to provide an academic setting in which all students can profitably interact with AI technologies. In particular, business students should be prepared to deal with any conceivable AI topic in any professional setting. Although a business curriculum that attempts to accomplish this might encompass students studying subjects other than AI, the knowledge gained by students so engaged can be used in far more situations than just those relating specifically to AI. Throughout, the focus should be on graduates being able to design and use these systems, with particular emphasis on the ethical and job displacement dimensions of bringing AI into the workplace.

Corresponding Author
Dr. Lovely Sharma,
pcmsd.drlovely@gmail.com

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1. INTRODUCTION

In the ever-evolving landscape of business education, the integration of Artificial Intelligence (AI) is a paradigm-shifting development. It introduces a novel dimension to the traditional methods of imparting business knowledge, promising a more dynamic and technologically adept learning experience. However, this revolutionary stride is not without its intricate set of challenges, demanding a thorough examination of the hurdles that accompany the assimilation of AI into the realm of business education.

Business education, historically a bastion of adaptability to the demands of the corporate world, is at a crossroads. The infusion of AI brings unprecedented possibilities, yet it necessitates a careful unraveling of complexities. From the intricacies of crafting a relevant curriculum and ensuring faculty preparedness to navigating ethical dilemmas regarding data usage and addressing potential disparities, the amalgamation of AI into business education requires meticulous scrutiny.

This research endeavours to dissect and illuminate the multifaceted issues and challenges entwined with this transformative journey. By delving into existing literature, scrutinizing real-world scenarios, and offering a nuanced analysis, this paper aspires to provide valuable insights into the intricate web of challenges surrounding AI in business

education. The objective is not merely to delineate challenges but to proffer well-informed solutions and recommendations that can serve as guiding beacons for educational institutions, faculty, and policymakers as they navigate uncharted territory in AI-infused business education.

In the upcoming sections, we will delve into the intricacies of curriculum development and integration, faculty readiness, ethical considerations, and the imperative of ensuring equitable access. Through this exploration, the aim is to present a comprehensive panorama of the challenges faced by the business education sector in embracing AI, with the ultimate goal of transforming these challenges into catalysts for positive educational evolution.

2. LITERATURE REVIEW

There is a scarcity of literature addressing the instruction of AI-related subjects in business curricula, with a majority of previous research being outdated. During the 1990s, a number of papers put forth the idea of integrating applied expert systems into business [14]. These publications propose the inclusion of AI in accounting curricula as a means to help students acclimate to professional settings where AI technologies are integral to tasks such as auditing, financial and management accounting, and taxation [2]. In a recent academic paper, the suggestion is made to revise both undergraduate and graduate accounting curricula, aiming to furnish students with vital skills and competencies in the field of AI.

AI literacy refers to an individual's capacity to utilize AI technology as a tool, critically assess its functionality, and apply it judiciously in both daily life and professional contexts. It encompasses the proficiency to communicate and collaborate effectively with AI systems [16].

Based on a study analyzing the artificial intelligence curriculum in primary and secondary schools, both domestically and internationally, the primary focus of education comprises machine learning, artificial neural networks, Artificial Concepts etc [13]

As per a study conducting a current state analysis of the artificial intelligence curriculum, the implementation of AI education is primarily being pursued within computer-related major subjects involving concepts such as Discrete Structure, Computer Vision and Algorithms [24].

As indicated by the study, to broaden the scope of universal AI education within liberal arts, it is imperative to communicate the overarching concept of AI. This goes beyond mere comprehension, extending to practical applications such as big data analysis and algorithm implementation. There is a proactive movement to enhance artificial intelligence education across schools and diverse educational institutions, aligning with the increasing demand for AI education and the ongoing shifts in employment trends.

Its emphasis lies in developing the capacity to identify and address problems using artificial intelligence, integrated with diverse academic disciplines. Essentially, there is a rising trend in competency-based education, viewing literacy skills as the capability to comprehend artificial intelligence and adeptly apply it across various contexts.

Specifically, the standard curriculum across elementary, middle, and high school levels tends to encompass an educational framework focused on comprehending and experiencing the fundamental principles of artificial intelligence essential for navigating the era of AI. This may also involve integration with data literacy concepts [20].

Conversely, in contrast to the initiatives promoting artificial intelligence education in business-related subjects, there remains a scarcity of comprehensive research on specific curricula within university education

Concerning university education, it is essential to contemplate not just the interconnection among diverse disciplines and grasping the principles, but also the proficiency in actively applying artificial intelligence [10].

Presently, with the increasing prevalence of AI across diverse industries, there is a demand for an AI education curriculum. However, there is inadequate research on technology education aimed at enhancing the capabilities of non-IT majors, particularly within the domain of business education. Furthermore, limited studies specifically address AI education in this context.

Lately, universities with a focus on software-centric programs are incorporating courses that emphasize computational thinking skills, along with subjects centered around software utilization and programming for software education [18]. Despite offering computing thinking skills and software utilization courses, SW-centric universities currently lack subjects related to AI, necessitating a more varied curriculum and diverse references. Thus, this study endeavors to create an educational curriculum focused on fostering problem-solving capabilities in technology convergence with an emphasis on AI literacy. The target audience includes non-software majors, particularly students in business and economics education, who face limited utilization and accessibility of AI technology in their current job scenarios. This

study is anticipated to serve as a foundational reference for the potential establishment of business education programs in AI across various universities in the future.

3. INTEGRATING AI INTO BUSINESS EDUCATION: A CASE STUDY OF LINGNAN UNIVERSITY

Lingnan University is one of Hong Kong's eight publicly funded universities and holds the distinction of being the sole institution committed exclusively to liberal arts education and implementing AI in Business Education. An illustration of Lingnan and its vision aligns with the traditional concept of a liberal arts college as "a small, residential college with caring faculty and staff who are committed to teaching over research and educating the whole student" [6]. Lingnan University traces its roots to the Canton Christian College in Guangzhou, China. Founded by Protestant churches in 1888, it was inspired by the liberal arts principles of American Christian liberal arts colleges [5]. The objective of the Canton Christian College was to instill Chinese students with the Christian ethos and Western knowledge and culture. This aim aimed to assist China in addressing the challenges posed by Western military influence and civilization ([5],[8]). The pursuit of this mission extended beyond the formal academic curriculum, encompassing the establishment of a comprehensive and collegiate culture. Within this culture, social and campus life played a vital role as an integral aspect of higher education [23]. Following the establishment of the People's Republic of China in 1952, Lingnan University was amalgamated with Sun Yat-sen University. However, in 1966, it was re-established as Lingnan School in Hong Kong, and in 1999, it attained full university status [5].

The university provides undergraduate programs across three main academic disciplines: Social Sciences, Arts, and Business. These academic programs deliver a comprehensive and well-integrated curriculum, encompassing discipline-specific courses, as well as Chinese and English language courses.

Furthermore, it offers Postgraduate program in Artificial Intelligence and Business Analytics represents 30 credits, consisting of six required courses and four elective courses, which prioritizing a well-rounded approach, each program emphasizes a comprehensive exploration of AI and business analytics. The focus is on utilizing AI techniques for business data analytics to address real-world business challenges. The course crafted to instruct students on the core principles and practical applications of AI and business analytics techniques, the program places particular emphasis on the business domain. This equips students to adeptly apply AI tools in problem-solving and analyze business issues through honed data analytic skills and AI techniques during decision-making processes. The students will be able to Examine intricate business challenges with creative and critical thinking, employing advanced business analytic skills and artificial intelligence techniques to inform decision-making. Also, Present the discoveries and engage with various stakeholders possessing diverse backgrounds.

Another aspect of Lingnan's Artificial Intelligence and Business Analytics program of postgraduation involves the widespread utilization of analytical and critical thinking, as well as their problem-solving skills. It considers practical applications in business and cutting-edge technologies by integrating AI and business analytics with blockchain, marketing, healthcare, geographical information systems, and optimization. This enhances the employability and competitiveness of graduates in the job market. The program imparts comprehensive knowledge across the fundamental disciplines of Artificial Intelligence (AI) and business analytics. By integrating diverse fields, it enables students to gain a holistic understanding of AI and business analytics, emphasizing their practical applications in the real world [15].

Although, Lingnan University has diligently strived to evolve into an internationally-oriented institution for Artificial Intelligence, However, it also confronts numerous challenges when integrating artificial intelligence into business. The intense competition and materialistic values in Hong Kong society, coupled with a restricted number of university openings, result in a considerable number of students being strongly focused on practical and professional pursuits [4]. According to the report of Hong Kong Productivity Council (HKPC), To establish Hong Kong as a global hub for the development of the AI and data industry, the HKPC has put forth nine key recommendations derived from the study's outcomes. The research, encompassing 216 AI-related enterprises, disclosed that 49% encountered difficulties in recruiting technical talent. Regarding industry advancement, 48% of firms concentrated exclusively on AI for a single industry, with 29% directing their efforts towards telecommunications and information technology services, and 24% concentrating on medical/clinical and health equipment. The primary revenue sources were 63% from Hong Kong, 19% from the Mainland, and 15% from international markets. The Chief Digital Officer at HKPC emphasized the positive influence of AI applications, with 49% of companies recognizing that the effects align with their expectations. Despite this, challenges were acknowledged, leading the study to offer practical recommendations for advancing AI applications across various industries.

To equip individuals for the dynamic shifts in future employment, it's crucial to go beyond mere knowledge transfer and focus on educating skills related to problem-solving and critical thinking [17].

4. OTHER ISSUES AND CHALLENGES OF AI IN BUSINESS EDUCATION

[25] denotes that Integrating AI into existing curricula requires careful planning to ensure relevance, depth, and alignment with industry needs. Emphasis is on ethical considerations, personalized learning, and fostering collaborations between business and AI experts for a comprehensive educational experience.

According to [1], many educators may lack the necessary expertise in AI, creating a need for training programs to enhance faculty readiness. In the context of AI in business education, it involves ensuring that faculty members possess the requisite knowledge and skills to teach AI-related content. This readiness encompasses proficiency in AI concepts, familiarity with relevant tools and technologies, and the ability to adapt teaching methods to engage students in the dynamic field of artificial intelligence.

Grasping the concept of artificial intelligence is crucial for developing genuine problem-solving skills. As AI continues to integrate into various professions, there is a growing necessity for an AI literacy curriculum that not only fosters technological proficiency but also encompasses competency in utilizing AI in diverse contexts [20].

Limited resources, both in terms of technology and funding, may hinder the adoption of AI tools and technologies in educational institutions [12]. Access to AI tools is vital for effective AI in Business education. Ensuring students have hands-on experience with industry-standard tools is crucial. However, resource constraints and varying levels of access across institutions present challenges, requiring strategic planning and partnerships to enhance accessibility and provide a comprehensive AI learning experience.

Challenges include evaluating problem-solving abilities, algorithmic thinking, and ethical considerations. A balanced approach encompasses written exams, project assessments, and real-world applications, ensuring comprehensive evaluation. Continuous refinement is essential to adapt to the evolving nature of AI and provide meaningful feedback to students, promoting a well-rounded understanding of artificial intelligence concepts and applications. [7] denotes developing effective assessment methods for AI education involves measuring both theoretical understanding and practical skills.

Establishing global standards for AI education is imperative to ensure consistency and quality across diverse educational institutions. Challenges include harmonizing curricula, addressing cultural nuances, and accommodating varied resources. Collaboration among international stakeholders is crucial to define common benchmarks, fostering a universally recognized framework. According to [3], Lack of standardized guidelines for AI education may result in inconsistent quality.

5. CONCLUSION

Artificial intelligence isn't a singular technology but a higher-level concept by intertwining various technologies. To nurture future talent for this era, AI education should prioritize adaptability and creative problem-solving skills, aligning with innovative shifts like the demand for ICT-based convergence technology and evolving industrial structures. Competency-based training becomes crucial to navigate rapid technological changes. Emphasizing creativity in knowledge acquisition and problem-solving, fostering industry-academia-research cooperation, and leveraging AI for business readiness are vital.

A universal curriculum is needed to cultivate practical skills, address everyday challenges, and align with evolving industry needs. Despite the growing demand for AI education, there's a gap in curriculum development, especially for business majors, necessitating research on diverse educational targets and goals.

Our research has certain limitations. Firstly, it is centered on a singular course within a specific University. Consequently, the findings and observations might not be universally applicable to other institutions with differing student demographics, backgrounds, and expectations. Secondly, due to the small sample size, we were unable to draw statistical conclusions about factors influencing Curriculum design and learning outcomes. Thus, our research remains a case study with limited applicability. Future studies aim to address these questions on a broader scale. Through the continual offering of this course and refined curriculum design based on student input, we anticipate gathering more extensive data and insights into the pedagogy of AI in business education.

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CONFLICT OF INTEREST

None.

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